

Olin Brass Alloy C7025 is a High Performance Alloy developed to meet the increasing material requirements of interconnect designers. C7025 combines good electrical and thermal conductivity with high strength, excellent stress relaxation resistance, good solderability and plateability. This combination of properties lends the alloy to be used in a wide variety of applications including automotive and electrical connectors, semiconductor leadframes and CPU sockets. The alloy can often be substituted directly for some Be-Cu alloys.

### Chemical Composition

<b>Copper<sup>1</sup></b>	<b>Remainder</b>
<b>Nickel</b>	<b>2.2-4.2%</b>
<b>Silicon</b>	<b>0.25-1.2%</b>
<b>Magnesium</b>	<b>0.05-0.30%</b>
Iron	0.20% max
Lead	0.05% max
Zinc	1.0% max

1. Cu plus Named Elements, 99.5%

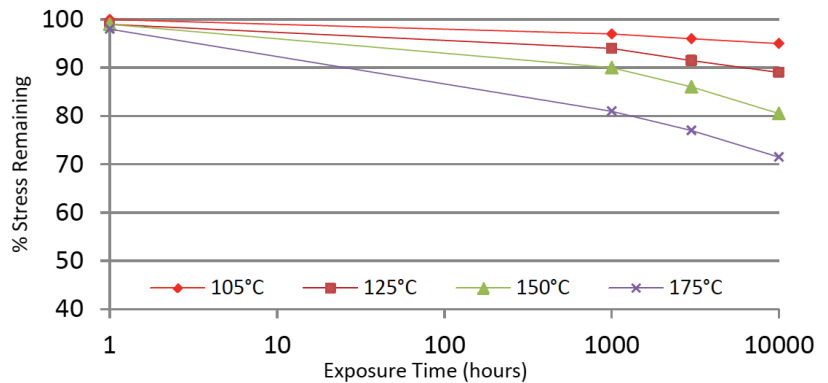


Figure 1: Stress relaxation performance of C7025 TM02.

### Physical Properties

	English Units	Metric Units
Density	0.318 lb/in <sup>3</sup> @ 68°F	8.82 g/cm <sup>3</sup>
Thermal Conductivity	100 BTU-ft/ft <sup>2</sup> -hr-°F	172 W/m <sup>2</sup> K
Electrical Resistivity	25.9 ohm circ mils/ft	4.3 microhm-cm
Electrical Conductivity (annealed)	40% IACS*	0.23 megamho/cm
Modulus of Elasticity	19,000,000 psi	131 kN/mm <sup>2</sup>
Coeff. Of Thermal Expansion		
68-212°F (20-100°C)	9.3 PPM/°F	16.7 PPM/°C
68-392°F (20-200°C)	9.6 PPM/°F	17.4 PPM/°C
68-572°F (20-300°C)	9.8 PPM/°F	17.6 PPM/°C

\*International Annealed Copper Standard

### Mechanical Properties

Temper <sup>1</sup>	Tensile Strength		Yield Strength <sup>2</sup>		% Elongation	Typical 90° Bend Formability	
	ksi	N/mm <sup>2</sup>	ksi	N/mm <sup>2</sup>		GW/BW <sup>3</sup>	
TM00	90-110	620-760	65-90	450-620	10% Min	1.0	0.5
TM02	95-120	655-830	85-110	590-760	7% Min	1.5	0.5
TM03	100-125	690-860	95-120	655-830	5% Min	1.5	1.0
TM03 HDC <sup>4</sup>	103-125	710-860	100-120	690-830	3% Min		
TR02	88 Min	605 Min	80 Min	550 Min	6% Min		

<sup>1</sup> Mechanical properties subject to change. Tensile strength and elongation are for reference only.

<sup>2</sup> C7025 is manufactured to a yield strength.

<sup>3</sup> DATA FOR REFERENCE ONLY. R/T = Minimum Bend Radius/Material Thickness <0.020" (0.5mm) thick, 11/16 (17.5mm) wide.

<sup>4</sup> HDC - High Density Connector. Developed specifically for socket contacts demanding very narrow tight bend performance.